മിസ്റ്റർ കുഞ്ഞുണ്ണി രാജ.—ഞാൻ ഇതിനെപ്പറ്റി ഒന്നും പറയുന്നില്ല.

രാമവർമ്മ തമ്പുരാൻ.—ഞാനും ഒന്നുകൂടി വിശദമാക്കുന്നില്ല.

മിസ്റ്റർ കുഞ്ഞുണ്ണി രാജ.—എന്നാൽ ഞാൻ ഇതുമുവ ചെയ്യുന്നില്ല.

The resolution was therefore considered withdrawn

22. Electricity from Chalakkudi waterfalls.

Mr. C. A Kunjunni Raja.—I move "that this Council recommends that immediate steps be taken to work the scheme prepared during the Diwanship of Mr. J. W. Bhore for the generation of electricity by the use of power available at the waterfalls in the Chalakkudi River." As a Member of the Special Finance Committee, I had occasion to study this scheme in some detail. The members of the Committee were given strict orders to keep the featnres of this scheme confidential. I shall reserve my remarks to my reply to whatever may be divulged by theGovernment Member. The ban that the matter has to be kept confidential has not been removed so far as I am concerned.

Mr. V. K. Aravindaksha Menon.—I did not quite follow the Member.

Deputy President.—He reserves his remarks after hearing your reply.

Mr. C. V. Kuriyan.—I rise to second this resolution. I wish to consider this resolution on several standpoints. The resolution says that immediate steps be taken "to work the scheme prepared during the Diwanship of Mr. J. W. Bhore for the generation of electricity by the use of power available at the water falls in the Chalakkudi River." The object of the mover is that immediate steps should be taken to generate power in the Chalakkudi river. Well, my first point will be that there is no cause for further delay to execute the work, since Mr. (Now Sir) J. W. Bhore had occasion to trace the whole matter with Mr. Forbes, the retired Electricity Officer of the Mysore State. Now the report submitted by Mr. Forbes is an exhaustive one and it is submitted to Government after due enquiries were made as to the prospects of the new scheme. I had occassion to get some smattering of the report and I was glad to find that he had made an exhaustive study of the waterfalls, the velocity of the falls, and the speed and the volume of discharge that may arise in several seasons and he has pointed out what will be the approximate cubic feet of discharge annually. Now, from those figures he has calculated, it is seen, that there is an immense possibility of collecting nearly, 25 thousand horse power of energy, if the water fall is augmented by fresh storage of water. It will be worthwhile to see how the scheme was proposed by Mr. Forbes. Now,

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there are six or seven falls in the Chalakkudi River the Kozhi kallukuthu, Poringalkuttu, Eachipara and Adhirappilli, Vazhachalkuttu and Gnandalkuttu. All these falls Mr. Forbes had occasion to examine thoroughly. The Poringalkuttu is nearly 500 feet high. That fall is not a vertical one. It is a slanting one. There are three stages in the fall. Now the object aimed at is to make that fall vertical. To achieve that object, a canal will have to be opened. That diversion canal will begin from a distance of two miles over and above that fall, so that water in the canal may be diverted to the point where the fall is and from there a vertical pipe line may be put so that the fall may be erect. Now the purpose of a vertical fall is to create more force for the fall. He has suggested a line of action in his report and that is that a canal should be made on the left side of the river. Now if the diversion canal is opened on the left side then there will be the necessity of a bridge being erected over the river; otherwise there will be no possibility of taking the materials, etc., for conducting the work. The necessity of the bridge has been emphasised in the report submitted by Mr. Forbes. Mr. Forbes has already located the position of the bridge as also the position of the canal, where to begin from and where to end. That canal which should be 1½ miles long as he has located, should go along some rocky places and that involves enormous expenditure. Now some months ago the spot was examined by the Member for Engineering and the Ex-Diwan and my information is that they suggested that the canal should be on the right side of the river. It will be less costly. It was to investigate the possibility of a canal on the right side of the river that Mr. K. B. Menon was appointed. Now the bank on the right side of the river is sandy and it may not involve a large expenditure. Now, after the investigation conducted by Mr. K. B. Menon, I think he had agreed to the proposal submitted by Mr. Forbes and found it was futile to try a canal on the right side. Not only that, Mr. Forbes has fixed the locality in his report where a bund is to be erected. Now the purpose of that bund is to augment the supply by a fresh storage of water which may be available in the summer season. But for that anicut or bund there will not be that uniform flow of water in all seasons. It is to obviate that shortage in the fall of the discharge of water in all weathe r that an anicut has to be erected higher up in the river. Now he has exactly fixed the position. He has also referred to the approximate cost the Government will have to incur in putting up that bund. From the report submitted by Mr. Forbes it will be seen that he has taken a keen study of the subject and he has also presented to us the possibility of increasing power by fresh augmentation by putting up a bund and

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by putting up a bridge so that the canal may be diverted on the left side. The maximum power that can be harnessed from that waterfall is 25 thousand horse power. He has also in his report said, that it may not be possible to invest all the money at once because that might cost lakhs and lakhs of rupees. The approximate estimate may come to 40 or 50 lakhs. As a preliminary measure he has suggested that it will be worthwhile to experiment on the first stage. Now his suggestion is that a bund may be erected to a height of 20 or 25 feet, so that so much water can be collected which may be sufficient to generate power. Now the maximum height he proposed to the dam is, I think, about 70 or 80 feet or so. Now, if the full maximum height of the bund is reached, he has suggested that there is a possibility of harnessing 25 thousand horse power. Now he does not aim at constructing the bund all at once. It is to be divided into two or three stages. So that, he expects in his initial stage only six or seven thousand horse power of energy. Now it is found that it may not be possible that the whole horse power within the possibility of the scheme can be generated all at once. So the first stage is to divert the canal to the point where the fall is and then put up a bund, raising it at present to one-third of its proposed maximum height. On account of that we will get seven or eight thousand horse power. The full detail is there. There is no room for further delay.

I have impressed the House the necessity of taking up the work immediately, since no further investigation is required. Some petty details may be necessary for estimate preparation. But that is being looked into and completed, if my information is correct.

Then again, I may urge this point on another ground, *i. e.*, the immediate necessity of taking up the work on the ground of utility. I only urge the point just to say that it is extremely necessary to take it up.

Deputy President.—The Government are already preparing the details.

Mr. C. V. Kuriyan.—I want to have the actual working begun at once. Even Mr. Forbes' details are exhaustive.

Deputy President.—Only after details are ready, correct estimates could be prepared.

Mr. C. V. Kuriyan.—It is being furnished hy Mr. K. B. Menon. Now, whatever money is spent on the scheme it will be of great use to the public. Now I cannot find any other scheme in the hands of the Government which is so urgent and which is so very vital to the interests of the people as this present scheme. It is extremely unfortunate to have postponed it for these so many years after having been furnished with the

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splendid report as is submitted by Mr. Forbes. I had occasion to peruse the notes of the present Diwan saying that before we ascertain the possibility of selling the power it may not be good to launch on that scheme. I have a word to speak on that point. The possibility of selling the power is not confined to the Tatas Harbour and Railways. Now, according to the report submitted by Mr. Forbes, he has suggested another valuable source of selling the power. That is for the Lift Irregation scheme. This power can be utilised not only for the Mukundapuram Taluk but also for the kole lands in other Taluks. If this Lift Irrigation scheme is introduced, if it is used for kole cultivation also, I think, that a large portion of the power can be sold. That was the point urged by Mr. Frobes, and also by the members of the Kole Committee. They strongly urged that this power can be utilised as far as possible to introduce this Lift Irrigation system in the Mukundapuram Taluk. Now if this power is used there, there will be a great saving in the kole lands by way of the cost of petrol and kerosene and engines now used for pumping out water. Now, if this power is available at cheap rates then we can dispense with the engines in the kole lands and we can use this cheap power not only in the Mukundapuram Taluk but there is also the immense possibility of converting single crop lands into double crop lands. That Lift Irrigation system will immensely benefit not only the cultivators in Mukundapuram Taluk but also kole owners. This Lift Irrigation scheme by electricity will be of great utility, and will be useful not only to the agriculturists but also to commercial men. At present there is a growth of mills, I may say a mushroom growth in the Trichur Taluk. In Trichur town itself you can count mills by tens. You have got a number of mills in other parts of the State also. For the maintenance of these mills they have to spend a large amount of money towards the cost of kerosene and fuel. If this power is available to the mill-owners it will be a good gain to them and also a good source for selling our power. We cannot anticipate all these before the scheme is actually taken up. Take for instance the popularity of the Ford or Chevrolet cars. They were not available for use in Cochin State. When people began to use them we find there is a rush for them every day. You cannot anticipate the prospects of the scheme unless we are in the line and if this is available to the people also then the people will use the power and there will be sufficient demand. On the ground that there will not be sufficient demand this scheme should not be delayed. With these words I commend this resolution for the acceptance of the House on the ground that this is the best scheme available. It should have the urgent consideration of the

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Government for it would be useful not only to the agriculturists but also to the commercial and industrial people.

Mr. C. J. Mathew.—May I know whether you have sounded the prospective firms as to how much power they would require?

Mr. V. K. Aravindaksha Menon.—We have not actually gone into that question. But we are approaching Tatas, Harbour and the Towns of Mattancheri and Trichur.

Mr. C. J. Mathew.—Have you any approximate idea of their requirements?

Rama Varmha Tampuran.—Their replies have not been received.

Mr. C. J. Mathew.—So this preliminary investigation will have to be continued?

Mr. V. K. Aravindaksha Menon.—The actual construction work can be started within three or four months.

Mr. C. J. Mathew.—So the Special Officer will be there for three or four months?

Mr. V. K. Aravindaksha Menon.—The Special Officer will have to continue. Estimates are being prepared.

Mr. K. J. Antony.—May I know whether the the present Diwan has visited the site?

Deputy President.—Yes.

Mr. V. K. Aravindaksha Menon.—The position of the Government is that they accept the spirit of the resolution. I may say that we asked Mr. Forbes now whether he could take up the investigation, but he has written to say that he is not in a position to come. Now we are trying to get some other consulting Engineer who may be entrusted with the work. In the meanwhile we will be completing the preparation of the estimates.

Mr. C. A. Kunjunni Raja—May I know whether the work will be taken up in right earnest?

Mr. V. K. Aravindaksha Menon.—If Government lauch on any scheme they do it in right earnest.

Mr. P. Krishna Menon.—I rise to support the resolution. To be frank and honest, I may say that my object in rising to support the motion is not in the hope that even the acceptance of this motion by the Government will hasten that much desired day of the completion of the work even by one hour. For my part I do not know why my honourable colleague, the Member for Jenmies, worded his resolution in this form. For I do not see the least objection for the Government to whole-heartedly accept the resolution without any discussion whatsoever. What the resolution says is this:

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"This Council recommends that immediate steps be taken to work out the scheme etc.".

Have they not repeatedly stated in this House that they have been taking steps and that they are taking steps and that they will be taking steps? The only thing is the addition of the word "immediate." I am told that on a recent occasion three distinguished visitors visited the place and one of them was a fast walker and the other two had to take very immediate steps to follow him. Therefore, I think, the Government are taking immediate steps. Therefore practically there can be nothing on the part of the Government by way of objection in accepting this resolution. Therefore I say it is not with the object of supporting this resolution that I actually stand up. Now I want the House to understand that this is not the only Electric Scheme that is before the public of Cochin. And so far as Ernakulam is concerned the electrification of Ernakulam has been proposed long long ago. If I have rightly understood the attitude of the Government, that scheme has been kept in abeyance in anticipation of the working of this scheme. Now if that is to be taken up or abandoned only after the completion of this scheme or only after the passing of a resolution not to take up the scheme at all, it is certainly not within the possibility of human things to say whether Ernakulam will be benefitted to any extent in the near future. In this connection I wish to inform the House that even for this session I had sent up a few questions which unfortunately remain unanswered even for today. When I read the questions it will be found where the ErnakulamElectric Scheme really stands. The questions are these:—

(1) Whether there are any difficulties or drawbacks of a technical character in the scheme proposed by the Municipal Council.

(2) If there are, what are they and whether they were ever pointed out to the Municipality.

(3) Are not the Government aware that the Municipality had incurred substantial expenditure in the preparation of the scheme.

(4) Did not the Municipal authorities assure the Government that the scheme, if sanctioned, would enable them to introduce electric lighting for Ernakulam even before 1922 November.

(5) Would the Government be pleased to state the objection for not sanctioning the scheme.

These are the questions that I have submitted. But they remain unanswered. Of course, I understand the question of sanctioning this scheme depends upon the construction or the abandonment of the scheme about which the resolution speaks.

Deputy President.—No question of the abandonment arises.

Mr. P. Krishna Menon.—The Government will never abandon for many many years to come. I know that. But they

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will be forced to abandon for certain facts which I shall shortly place before the House. This scheme they will have to abandon, I say. I am going to explain.

Deputy President.—So you oppose the resolution. You do not want them to take up the scheme which the Government will be forced to give up?

Mr. P. Krishna Menon.—Now I have had occasion to bring to the notice of the House some of the particulars about the Pycara Scheme. It was only a few months ago that I attended a function at Calicut, where the Hon'ble Sir M. Krishnan Nayar opened the installation of the Power House in Kallayai near Calicut and there I myself heard the Hon'ble Member say that before he relinguished his office which will be somewhere by the end of 1932, the whole of South India will be supplied with lights and fans from the Pycara Installation. And on a former occasion I brought to the notice of the House that in that scheme they have an idea of even marketing the energy in Cochin. Therefore, I say, if that scheme proves successful and energy can be had at a cheaper rate in Cochin I do not think there will be the necessity for launching upon a scheme which will cost lakhs and lakhs and yet the authorities will not be able to sell the power at a cheap price.

Deputy President.—Is it not better to put it off then? You say that if the matter is not taken up now, you will get energy at a cheaper rate.

Mr. P. Krishna Menon.—Therefore all these steps that are taken now without actually taking the necessary steps to bring it into fruition will be a waste.

Mr. K. P. Kannan Nayar.—It is very difficult to understand the Hon'ble Member.

Mr. P. Krishna Menon.—Am I not clear?

Mr. C. Barton Wright.—Absolutely clear.

Mr. P. Krishna Menon.—Therefore I am supporting the motion. Therefore, unless immediate steps are taken, a time will come when the energy generated at Poringalkuttu will be too costly to be marketed at all. Therefore, unless they are early in the field certainly there is no prospect of the scheme proving financially successful after the investment of such a large capital. Therefore I say that it ought to be launched in the immediate future. Now of course I can understand the difficulty of the Government also. The working of that scheme involves, if I remember correctly, three stages. In the first place there must be a new tramline to take the plant that is necessary for installation of the Power House and the dam etc. It is that tramline that is being surveyed now. They must construct the tramline and then only they will be in a position

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to transport the goods that are necessary for the plant at the site. All these will take a number of years and unfortunately by the time, if it so happens that cheaper power is available, the whole thing will prove to be awaste. But if the thing is started and completed sufficiently early there will not be the advent of the power from outside. Whether it is going to be taken up or not, it is no answer for not sanctioning the scheme so far as Ernakulam is concerned.

Duputy President.—The question is not with reference to the electrification of Ernakulam. The resolution relates to the Hydro-Electric Scheme.

Mr. P. Krishna Menon.—So if it will be irrelevant to speak about Ernakulam, I shall sit now.

Mr. K. P. Kannan Nayar.—From what I heard just now I am afraid whether we should vote for this resolution or not. That is my fear. Be ause from what I heard from the Hon'ble Member, who just now finished his speech, I understand that if we wait for two years more we can get power cheaper—no doubt it may be generated from outside—and unless we are prepared to take in our home product and to pay more cost since we are producing it in our own State our scheme will be a failure.

Mr. P. Krishna Menon —Don't think that I am joking.

Mr. K. P. Kannan Nayar.—If I have understood you seriously, it is a serious proposition so far as we are concerned. So far as this particular scheme is concerned we have spent a lot of money in investigation. We have begun only just now and we will not be able to finish it in the course of one or two years and give out power to the consumers here. Supposing we are only able to get it at a higher rate than it will be available if we purchase from outside, I am sure all people will go for the cheaper power from outside. Then in that case would it be worth while for the Government to take up this scheme which the Government will be forced to give up? The whole money spent upon it will be wasted. I am not in a position to say that the proposition enunciated by my Hon'ble predecessor is correct. He says, that he heard from somewhere else that from the Pycara Project, if it is going to be successful, we may be in a position to get electricity cheaper. But I do not know that. If that is so, it will not be wise for our Government to launch upon the scheme.

Mr. C. Barton Wright—It is only a supposition that it would be cheaper. Have you any guarantee that it will be cheaper?

Mr. P. Krishna Menon.—It is a statement of a responsible Minister of the Madras Government that it will be cheaper.

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Mr. V. K. Aravindaksha Menon.—Did the Minister say that the energy from Pycara will be cheaper than which Cochin can supply?

Mr. P. Krishna Menon.—Cochin has yet to say its rate. The rate there was given.

Mr. V. K. Aravindaksha Menon.—How much?

Mr. P. Krishna Menon.—Of course I know more or less the capital that you are going to spend.

Mr. V. K. Aravindaksha Menon.—What is the rate there?

Mr. P. Krishna Menon.—What will be the rate here?

Deputy President.—Do you want this matter to be put to the votes?

Mr. V. K. Aravindaksha Menon.—The Member made a statement that Pycara power is cheaper than Cochin product.

Dr. A. R. Menon.—He heard it somewhere said by somebody. After listening to the vehement speech of the friend in front of me, not Mr. Chakko, I must confess, to my dull-headedness or his incapacity, that I am not in a position to explain clearly what he means that we were in no way wiser than we were. It may be to both causes. The whole argument was based upon the information he derived from somewhere from somebody. Who this somebody or this somewhere is, was not made out.

Mr. P. Krishna Menon.—That is the dull-headedness.

Dr. A. R. Menon.—The only wording is Pycara. Where is this Pycara? Does he understand what he is talking about water fall, electricity, Ernakulam Municipality, etc.? He seems to think that the world's existence will come to an end if anything happens to the Ernakulam Municipality. You start anything and it ends with the Ernakulam Municipality.

The Hon'ble Member somehow or other brings arguments. We were talking about waterfalls, electricity, etc. He gave a description of the various steps. We were very much obliged for that, though I was not able to follow him. It is a technical subject. That requires a lot of study. My friend sitting here without any of this trouble says that our electric scheme will come to an end unless you finish it by the end of 1932. What is the meaning of this argument? That is a scheme involving lakhs of rupees. It is a scheme which will require months of study. It is a scheme which requires a grand conception and I have my own doubts whether this could be undertaken without adequate consultation with those who have specialised in this work; only those who have seen the work could realise the magnitude of this task. Nobody would be able to finish that work within two years. If electricity is going to be cheaper within

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two years, if you cannot finish that before two years, the question has to be dropped. But I don't attach the least importance to the imaginary statement or the hearsay which the Hon'ble Member brings forward here as solid statament of facts. In the meantime Government would be well advised to leave the Ernakulam Municipality to have their own electricity. They will not be worried with the 2 year business. You can take your time, consider the proposition in all its reasons and all its various aspects and then launch a scheme worth the name of Hydro-Electric Scheme. The idea is that Hydro-Electric Scheme is for Ernakulam Municipality. It is not so. The conceptien, as I understood, is something more than supplying electric lights and supplying something to Ernakulam. I don't sympathise with any one who comes forward and say, you must push this work through. At the same time I am very anxious that the work must be undertaken and placed on a solid basis with due consideration and proper appreciation of the involvements of such a good scheme. We must consider whether we will be able to bear the burden and whether the results achieved are commensurate with the expenses. I can understand that argument. But with all the deference to my friend sitting here and who used to advise me to be a little more clam, I say he seems to be very much excited about the electrical business.

Deputy President.—The mover likes to withdraw the resolution.

Mr. V. K. Aravindaksha Menon.—The Member for Vyttila has said that delay on our part to take up the scheme would involve the risk of abolishing it, as the Pycara electric power would be extended to Cochin in a short time and that it will be cheaper.

Knowing, as I do, something about the power requirements of South India, I may state with confidence that power saturation will not result here even if we develop all the power resources in South India. So there is no chance of the Cochin Hydro-Electric power becoming superfluous at any time. The Member has not enlightened us as to how the Pycara power will be cheaper than Cochin power. Taking the length of transmission lines, etc., it would appear that it would be otherwise. Therefore the argument, that if the Pycara power comes here faster than we can develop it ourselves, there will be no necessity for doing our work is fundamentally wrong.

Mr. Thomas Manjuran.—But still why don't you expedite?

Mr. V. K. Aravindaksha Menon.—We are trying to do it as fast as possible. But you must realise the difficulties. In the first place the tract is malarial.

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Mr. A. Eachara Menon.—Do not these exist in Pycara?

Mr. V. K. Aravindaksha Menon.—No malaria in Pycara. The first portions of the work will necessarily be slow and difficult. After getting our sheds and our roads in a better order, we will be able to show better progress.

Mr. A. B. Salem.—From the estimates you have already made may I know what would be the approximate cost per unit?

Mr. V. K. Aravindaksha Menon.—·6 annas or half an anna. The Tatas supply at ·55 annas.

Deputy President.—From the explanation given, do you want to press?

Mr. C. A. Kunjunni Raja.—I withdraw.

The resolution was withdrawn with the leave of the House.

23. College Designs at Ramavarmapuram.

Mr. C. V Kuriyan.—"This Council recommends to the Government to take advice from an educational expert of Madras service with regard to College designs at Ramavarmapuram and suspend building operations till the approval of such expert is obtained".

It may appear at first too presumptuous on my part for having taken up such a subject. The prospects of a college at Ramavarmapuram are looming before us and we are left in vague doubts about the prospect of the said college. So I just wished to address this House on this point to know whether the college is to be turned out into an Agricultural College, or whether it is to be turned into a Kerala University; on all these points we are left in entire doubt. If that institution is going to be constructed on such a large scale so as to compete with any of the institutions in Southern India then I think it would be best in the interests of the Government to consult an educationist first, so that the designs may be shown and his technical advice taken. I don't wish to cast any aspersion on the Engineering Department who may have designed the buildings that are being constructed. If the whole scheme is presented to him and the possibilities of a full-fledged college or University are explained to him then he will be in a position to suggest some salutary proposals with regard to designs and the artistic conception of an ideal College. My object is not to condemn the present designs for I am not in a position to pass any remark, it being a technical matter. It would be better if the expert is brought and consulted about the artistic outlook of the surroundings. Since it has immense possibilities we cannot understand the exact nature of the work. I am afraid one is not able to say whether it is an ordinary College that is going to be started, or whether it should be converted into a University, or whether it should be a residential College, or whether it thould be an Agri-

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